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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,133	08/10/2001	Russell Andrew Fink	00-4045	6468

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ARLINGTON, VA 22201-2909

EXAMINER
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TESLOVICH, TAMARA

ART UNIT	PAPER NUMBER
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2137

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/26/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/26/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@VERIZON.COM

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/928,133		FINK ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Tamara Teslovich		2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 25-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 25-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This office action is in response to Applicant's Remarks and Amendments filed January 3, 2007.

Claims 1, 6, 11, and 16 are amended.

Claims 21-24 are cancelled.

Claims 1-20 and 25-32 are herein considered.

### ***Response to Arguments***

Applicant's arguments filed January 3, 2007 have been fully considered but they are not persuasive.

Applicant's arguments concerning Kramer and Kirby's failure to teach or suggest a key exchange adapted to repeatedly derive a cipher key such that the resulting cipher key changes over time are not persuasive for two reasons. First, Applicant admits within page 10 of his arguments that Kirby does in fact teach the use of a Kerberos Network Authentication system but argues that the reference fails to disclose wherein the authentication system repeatedly derives its keys. The Examiner would like to take this opportunity to bring to the Applicant's attention the specific inclusion of expiration times within Kerberos systems used to set the period after which a cipher key is to be re-generated and expired from use. Although it is the Examiner's opinion that this repeated derivation of keys is well known to those skilled in the art during the period in question, she has also chosen to include within her office action a copy of John Kohl and B. Clifford Neuman's "The Kerberos Network Authentication Service" wherein the

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expiration of tickets and regeneration of cipher keys is clearly taught (see pages 5-6 of the specification specifically for an introduction to the use of expiration times and the repeated issuance of new tickets and new keys). The Examiner's second objection to the Applicant's arguments concerns Applicant's recitation of the intended use of the claimed invention, namely that the "adapted to repeatedly derive a cipher key such that the resulting cipher key changes over time" must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant scenario, it is clear that the prior art system relied upon is capable of repeatedly deriving a cipher key using its Kerberos system.

Therefore, based on the above arguments, the Examiner maintains the rejections set forth in the previous office action and amended below in accordance with the Applicant's amendments.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-20 and 25-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kraemer et al. (U.S. Patent No. 5,798,706), and further in view of International Patent Application Publication No. WO 97/26734.**

As per **Claim 1**, Kraemer et al. discloses an apparatus for detecting adversarial activity on a network, comprising a memory adapted to store a host table (see col.3 lines 46-60); a key exchanger; a translator adapted to translate predetermined portions of packet header information of a data packet, wherein the predetermined portions include an address (see col.4 lines 33-46); a mapping device adapted to map the address to the host table (see col.3 line 60 thru col.4 line 2); a host resolution device adapted to issue a request to the network to resolve the address when the address does not match an entry in the host table and to supplement the host table with the address upon receipt of a reply to the request that indicates that the address is valid (col.4 lines 33-52); and an actuator adapted to trigger a security device when the address does not match an entry in the host table (see col.4 lines 3-5 and 20-32).

Kraemer fails to specifically mention a key exchanger adapted to repeatedly derive a cipher key and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key.

WO 97/26734 teaches a key exchanger adapted to repeatedly derive a cipher key (see WO 97/26734 page 8 lines 10-15, and page 11 line 31 thru page 13 line 5 "Kerberos") and a translator adapted to translate predetermined portions of packet

header information of a data packet according to a cipher algorithm keyed by the cipher key (page 2). Examiner's Note: the Kerberos system relied upon by the WO 97/26734 reference is known by those skilled in the art to include the expiration and regeneration of keys to enhance a system's security.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include within the Kraemer system a key exchanger adapted to repeatedly derive a cipher key and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key as described in WO 97/26734 to provide enhanced security capabilities.

As per **Claim 2**, the combination of Kraemer and WO 97/26734 discloses an apparatus as set forth in Claim 1, wherein the security device is a logging device adapted to log the data packet (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 3**, the combination of Kraemer and WO 97/26734 discloses an apparatus as set forth in Claim 1, wherein the security device is adapted to signal an alarm when triggered (see Kraemer col.2 lines 27-31 and col.4 lines 20-25).

As per **Claim 4**, the combination of Kraemer and WO 97/26734 discloses an apparatus as set forth in Claim 1, further comprising a host resolution device adapted to derive the host table using an address resolution protocol (see Kraemer col.4 lines 48-52).

As per **Claim 5**, the combination of Kraemer and WO 97/26734 discloses an apparatus as set forth in Claim 1, further comprising a network device adapted to place

the data packet onto a network when the address maps to the host table (Kraemer col.1 line 66 through col.2 line 9 and col.2 lines 27-31).

As per **Claim 6**, Kraemer et al. discloses a method for detecting adversarial activity on network, comprising storing a host table (see col.3 lines 46-60); deriving a key; translating predetermined portions of packet header information of a data packet, wherein the predetermined portions include an address (see col.4 lines 33-46); mapping the address the host table (see col.3 line 60 thru col.4 line 2); issuing a request to the network to resolve the address when the address does not match an entry in the host table and supplementing the host table with the address upon receipt of a reply to the request that indicates that the address is valid (col.4 lines 33-52); and triggering a security device when the address does not match an entry in the host table (see col.4 lines 3-5 and 20-32).

Kraemer fails to specifically mention a key exchanger adapted to repeatedly derive a cipher key and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key.

WO 97/26734 teaches a key exchanger adapted to repeatedly derive a cipher key (see WO 97/26734 page 8 lines 10-15, and page 11 line 31 thru page 13 line 5 "Kerberos") and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key (page 2). Examiner's Note: the Kerberos system relied upon by the WO 97/26734

reference is known by those skilled in the art to include the expiration and regeneration of keys to enhance a system's security.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include within the Kraemer system a key exchanger adapted to repeatedly derive a cipher key and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key as described in WO 97/26734 to provide enhanced security capabilities.

As per **Claim 7**, the combination of Kraemer and WO 97/26734 discloses a method as set forth in Claim 6, further comprising logging the data packet when the address does not match an entry in the host table (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 8**, the combination of Kraemer and WO 97/26734 discloses a method as set forth in Claim 6, further comprising signaling an alarm when the security device is triggered (see Kraemer col.2 lines 27-31 and col.4 lines 20-25).

As per **Claim 9**, the combination of Kraemer and WO 97/26734 discloses a method as set forth in Claim 6, further comprising deriving the host table using an address resolution protocol (see Kraemer col.4 lines 48-52).

As per **Claim 10**, the combination of Kraemer and WO 97/26734 discloses a method as set forth in Claim 6, further comprising placing the data packet onto a network when the address maps to the host table (see Kraemer col.4 lines 3-5 and 26-31).



As per **Claim 11**, Kraemer et al. discloses a device for detecting adversarial activity on a network, comprising means for storing a host table (see col.3 lines 46-60); means for deriving a key; means for translating predetermined portions of header information of a data packet, wherein the predetermined portions include an address (see col.4 lines 33-46); means for mapping the address to the host table (see col.3 line 60 thru col.4 line 2); means for issuing a request to the network to resolve the address when the address does not match an entry in the host table and supplementing the host table with the address upon receipt of a reply to the request that indicates that the address is valid (col.4 lines 33-52); and means for triggering a security device when the address does not match an entry in the host table (see col.4 lines 3-5 and 20-32).

Kraemer fails to specifically mention means to repeatedly derive a cipher key and means to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key.

WO 97/26734 teaches the means to repeatedly derive a cipher key (see WO 97/26734 page 8 lines 10-15, and page 11 line 31 thru page 13 line 5 "Kerberos") and the means to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key (page 2). Examiner's Note: the Kerberos system relied upon by the WO 97/26734 reference is known by those skilled in the art to include the expiration and regeneration of keys to enhance a system's security.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include within the Kraemer system the means to repeatedly

derive a cipher key and the means translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key as described in WO 97/26734 to provide enhanced security capabilities.

As per **Claim 12**, the combination of Kraemer and WO 97/26734 discloses a device as set forth in Claim 11, further comprising means for logging the data packet when the address does not match an entry in the host table (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 13**, the combination of Kraemer and WO 97/26734 discloses a device as set forth in Claim 11, further comprising means for signaling an alarm when the security device is triggered (see Kraemer col.2 lines 27-31 and col.4 lines 20-25).

As per **Claim 14**, the combination of Kraemer and WO 97/26734 discloses a device as set forth in Claim 11, further comprising means for deriving the host table using an address resolution protocol (see Kraemer col.4 lines 48-52).

As per **Claim 15**, the combination of Kraemer and WO 97/26734 discloses a device as set forth in Claim 11, further comprising means for placing the data packet network when the address maps to the host table (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 16**, Kramer et al. discloses a bastion host adapted for processing packet header information of a data packet, the bastion host being operable to store a host table (see col.3 lines 46-60) derive a key; translate predetermined portions of packet header information of a data packet, wherein the predetermined portions include an address (see col.4 lines 33-46); map the address to the host table (see col.3 line 60).

thru col.4 line 2); issuing a request to the network to resolve the address when the address does not match an entry in the host table and supplementing the host table with the address upon receipt of a reply to the request that indicates that the address is valid (col.4 lines 33-52); and trigger a security device when the address does not match an entry in the host table (see col.4 lines 3-5 and 20-32).

Kraemer fails to specifically mention repeatedly deriving a cipher key and translating predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key.

WO 97/26734 teaches a key exchanger adapted to repeatedly derive a cipher key (see WO 97/26734 page 8 lines 10-15, and page 11 line 31 thru page 13 line 5 "Kerberos") and a translator adapted to translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key (page 2). Examiner's Note: the Kerberos system relied upon by the WO 97/26734 reference is known by those skilled in the art to include the expiration and regeneration of keys to enhance a system's security.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include within the Kraemer system the means to repeatedly derive a cipher key and the means translate predetermined portions of packet header information of a data packet according to a cipher algorithm keyed by the cipher key as described in WO 97/26734 to provide enhanced security capabilities.

As per **Claim 17**, the combination of Kraemer and WO 97/26734 discloses the bastion host as set forth in Claim 16, the bastion host being further operable to log the

data packet when the address does not match an entry in the host table (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 18**, the combination of Kraemer and WO 97/26734 discloses the bastion host as set forth in Claim 16, the bastion host being further operable to signal an alarm when the security device is triggered (see Kraemer col.2 lines 27-31 and col.4 lines 20-25).

As per **Claim 19**, the combination of Kraemer and WO 97/26734 discloses the bastion host as set forth in Claim 16, the bastion host being further operable to derive the host table using an address resolution protocol (see Kraemer col.4 lines 48-52).

As per **Claim 20**, the combination of Kraemer and WO 97/26734 discloses the bastion host as set forth in Claim 16, the bastion host being further operable to place the data packet onto a network when the address maps to the host table (see Kraemer col.4 lines 3-5 and 26-31).

As per **Claim 25**, the combination of Kraemer and WO 97/26734 discloses wherein the address includes a network portion and an apparatus portion, and wherein said translator is **adapted to** translate the apparatus portion of the address without also translating the network portion of the address (see page 11 lines 17-22 of WO 97/26734).

As per **Claim 26**, the combination of Kraemer and WO 97/26734 discloses wherein the data packet includes a header with a plurality of fields carrying packet header information, wherein said translator is **adapted to** translate at least a portion of the packet header information in one or more predetermined fields of the header into a

translated packet header, the translated packet header including the translated packet header information in the one or more predetermined fields of the packet header interspersed with un-translated packet header information in fields other than the one or more fields of the packet header (WO 97/26734 page 7 line 31 through page 8 line 9).

As per **Claim 27**, the combination of Kraemer and WO 97/26734 discloses wherein the address includes a network portion and an apparatus portion, and wherein translating predetermined portions of packet header information includes translating the apparatus portion of the address without also translating the network portion of the address (see page 11 lines 17-22 of WO 97/26734).

As per **Claim 28**, the combination of Kraemer and WO 97/26734 discloses wherein the data packet includes a header with a plurality of fields carrying packet header information, wherein translating predetermined portions of packet header information comprises:  
translating at least a portion of the packet header information in one or more predetermined fields of the header into a translated packet header, the translated packet header including the translated packet header information in the one or more predetermined fields of the packet header interspersed with un-translated packet header information in fields other than the one or more fields of the packet header (WO 97/26734 page 7 line 31 through page 8 line 9).

As per **Claim 29**, the combination of Kraemer and WO 97/26734 discloses wherein the address includes a network portion and an apparatus portion, and wherein said means for translating predetermined portions of packet header information is

**adapted to** translate the apparatus portion of the address without also translating the network portion of the address (see page 11 lines 17-22 of WO 97/26734).

As per **Claim 30**, the combination of Kraemer and WO 97/26734 discloses wherein the data packet includes a header with a plurality of fields carrying packet header information, wherein said means for translating predetermined portions of packet header information **is adapted to** translate at least a portion of the packet header information in one or more predetermined fields of the header, and **is further adapted to** copy the translated packet header information into the respective one or more fields of the header to thereby generate a translated packet header, the translated packet header including the translated packet header information in the one or more predetermined fields of the packet header interspersed with un-translated packet header information in one or more other fields of the packet header (WO 97/26734 page 7 line 31 through page 8 line 9).

As per **Claim 31**, the combination of Kraemer and WO 97/26734 discloses wherein the address includes a network portion and an apparatus portion, and wherein the bastion host **is operable to** translate predetermined portions of packet header information including translating the apparatus portion of the address without also translating the network portion of the address (see page 11 lines 17-22 of WO 97/26734).

As per **Claim 32**, the combination of Kraemer and WO 97/26734 discloses wherein the data packet includes a header with a plurality of fields carrying packet header information, wherein the bastion host **is operable to** translate predetermined

portions of packet header information including:

translating at least a portion of the packet header information in one or more predetermined fields of the header into a translated packet header, the translated packet header including the translated packet header information in the one or more predetermined fields of the packet header interspersed with un\translated packet header information in fields other than the one or more fields of the packet header (WO 97/26734 page 7 line 31 through page 8 line 9).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Examiner has included with this office action a copy of John Kohl and B. Clifford Neuman's "The Kerberos Network Authentication Service" as additional support for the repeated derivation of keys within a Kerberos system.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamara Teslovich whose telephone number is (571) 272-4241. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



T. Teslovich



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